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ABSTRACT

Results are given of six experiments made to test the hypothesis that urban Anglo-Americans are alloplastic, i.e., try to adjust the environment to fit their own needs, and rural Mexicans are autoplastic, i.e., adjust themselves to meet the presses of the environment. A seventh experiment is proposed. It was predicted that urban Anglo-American children would be more field independent and non-conformist than rural Mexican children in situations traditionally used to measure those variables, and that at novel behavioral choice points, Anglo-Americans would be higher in behaviors indicating preference for internal control, high aspirations and achievement, expression of desires, and risk taking. The proposed experiment will be based on the prediction that when urban Anglo-American and rural Mexican children are placed in a situation in which either too little or too much alloplastic behavior is nonadaptive, the Anglo-American will be overly alloplastic in contrast to the rural Mexican who will be insufficiently alloplastic. A review is made of literature used as bases for the alloplastic-autoplastic hypothesis. The experiments are grouped as follows: A. Cultural Mode and Traditional Choice Points--Exp. 1, Field Dependence, Exp. 2, Conformity; B. Cultural Mode and Novel Choice Points--Exp. 3, Preference for Control, Exp. 4, Preference for Achievement and Aspiration, Exp. 5, Preference for Risk Taking; and C. Cultural Mode and Adaptivity--Exp. 7, Alloplastic Behavior and Adaptivity. A lengthy bibliography is provided. (DB)

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ADAPTATION MODE AND BEHAVIOR OF URBAN ANGLO AMERICAN AND RURAL MEXICAN CHILDREN

by

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Abstract

A number of authors have described differences between urban Anglo Americans and rural Mexicans which support the hypothesis that urban Anglo Americans are alloplastic and rural Mexicans are autoplastic. That is, when there is a conflict between the individual and his environment, urban Anglo Americans try to adjust the environment to fit their own needs and rural Mexicans adjust themselves to meet the presses of the environment. To test this hypothesis six experiments have been conducted and a seventh experiment is proposed. Some of the experiments more clearly measure an autoplastic orientation (field dependency, conformity) and some of the experiments more clearly measure an alloplastic orientation (achievement, preference for control). Traditional behavioral choice points were used in Experiment 1 (field dependence) and Experiment 2 (conformity). These variables are known to distinguish individuals in terms of their preference for alloplastic or autoplastic modes of adaption. Novel behavioral choice points were used in Experiment 3 (preference for control) and Experiment 4 (preference for achievement and aspiration). Although the choice points used were novel, they were based on variables which are also known to distinguish individuals in their preference for alloplastic and autoplastic behaviors. Experiment 5 (preference for expression of desire) and Experiment 6 (preference for risk taking) also employed novel behavioral choice points, but the dependent variables have no established relationship to alloplastic or autoplastic behavior preferences. Cultural differences in these experiments were

predicted because behavior in the experimental situations was believed to be a function of tendencies associated with alloplastic or autoplastic adaption modes. Experiment 7 (alloplastic behavior and adaptivity) is proposed to measure the extent to which the children of each culture will persist in their preferred cultural mode of adaption when to do so is non-adaptive in terms of their own goals. Experiment 7 will also further test the generality of the cultural preferences for adaption modes by including several semi-unobtrusive measures of alloplastic behavior.

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INTRODUCTION

Research Approach

Anthropological observations and formulations as well as some experimental findings support the hypothesis that urban Anglo Americans and rural Mexicans are at opposite ends of a psychological continuum which may be conceptualized as alloplastic-autoplastic. That is, when there is a conflict between the individual and his environment, urban Anglo Americans try to adjust the environment to fit their own needs whereas rural Mexicans adjust themselves to meet the presses of the environment. Urban Anglo Americans may be described as need-oriented in contrast to rural Mexicans who are press-oriented. This conceptualization of the cultural differences between urban Anglo Americans and rural Mexicans is specific enough to generate testable predictions about behavior in novel situations as well as in numerous situations traditionally used to test personality and social variables. In preparation for this dissertation, on the basis of the alloplastic-autoplastic hypothesis, it was predicted that urban Anglo-American to a greater extent than rural Mexican children would be more field independent and non-conformist in situations traditionally used to measure those variables. Further, it was predicted that at novel behavioral choice points Anglo Americans would be higher in behaviors indicating preference for internal control, high aspirations and achievement,expression of desires, and risk taking. Data has been collected to test these six hypotheses, and it is my proposal to analyze and present that data as part of this dissertation. In addition, I propose to further

test the alloplastic-autoplastic hypothesis by determining the extent to which the children of each culture persist in their cultural mode of adaptation when doing so is non-adaptive in terms of self interest. Thus, as the seventh experiment, I propose to place urban Anglo-American and rural Mexican children in a situation in which either too little or too much alloplastic behavior is non-adaptive. It is predicted that Anglo American and rural Mexican children will be non-adaptive in opposite ways, that is, the Anglo Americans will be overly alloplastic in contrast to the rural Mexicans who will be insufficiently alloplastic to receive the rewards for which they are striving.

Although the proposed research as a whole will provide some valuable data about the effects of culture on field independence, conformity, locus of control, level of aspiration, achievement, expression of desire, risk taking and adaptiveness, the primary focus of the dissertation will be testing the alloplastic-autoplastic hypothesis. Each of the personality and social variables tested could conceivably have a great number of measures with very different degrees of correlation. Any thorough analysis of the effects of culture on any one of the personality or social variables involved would have to be based on a multi-measure approach. No such thorough analysis of any one variable is proposed. By using a wide variety of variables and by using obtrusive and semi-unobtrusive dependent measures, however, it is proposed to test rather thoroughly the hypothesis that urban Anglo American children prefer an alloplastic mode of adaptation in contrast to rural Mexican children who prefer a more autoplastic mode of adaptation. For brevity, that hypothesis will be called "the alloplastic-autoplastic" hypothesis.

The alloplastic-autoplastic hypothesis as stated is simply descriptive. As such it is a way to summarize a number of findings and to generate predictions about behavior in new situations. The hypothesis that individuals consistently prefer either an alloplastic or autoplastic mode of adaptation also provides something of a theoretical link which may underlie and explain established correlations between a number of personality and social variables. If the developmental antecedents of alloplastic and autoplastic adaptation modes can be determined, however, the construct would obtain explanatory as well as descriptive power. Although some of the possible developmental antecedents will be discussed, no attempt to test causal hypotheses is proposed for this dissertation. The experimental method will be used only as a way of allowing valid description of the differences between cultural groups.

Bases for the Alloplastic-Autoplastic Hypothesis

1. Kluckhohn: Value Orientations. Florence Kluckhohn (1954, 1961) attributes the slow rate of assimilation of Spanish and Mexican immigrants to the United States to a wide disparity in all the major value orientations of the two cultural groups. Of particular interest for the alloplastic-autoplastic hypothesis are the types of relations to nature and the personalities valued by the two groups. Kluckhohn claims that Mexicans see man as subjugated to nature and they value a "being" orientation. In contrast, Anglo Americans see man as dominant over nature and they prefer a "doing" orientation. This statement is clearly consistent with the alloplastic-autoplastic hypothesis, but Kluckhohn presents almost no empirical data to back her claims.

In a later statement of the same theory Kluckhohn and Fred Strodtbeck (1961) present some sociological and anthropological evidence that Mexican children are as vigorously trained for dependent behavior as Anglo American children are schooled for independence.

2. Fromm and Maccoby: Modes of Assimilation. Erich Fromm and Michael Maccoby (1970) present more evidence supporting the alloplastic-autoplastic hypothesis in their intensive study of Las Cuevas, a small Mexican village of 162 households, located between Acapulco and Mexico City, chosen as a typical Mexican village. As part of a six year research project, adult villagers were interviewed for three to six hours each. Interviewers administered an "interpretive questionnaire" which was structured on a dynamic concept of character. The questionnaires were scored for mode of assimilation -- a villager could be characterized as having either a receptive, exploitative, hoarding, or marketing orientation. The hoarding and marketing orientations are of little significance for the alloplastic-autoplastic hypothesis. The marketing orientation is almost never found among villagers, and the hoarding orientation is a mixture of alloplastic and autoplastic qualities (stubborn, suspicious, obsessional, and possessive, on one hand, but lethargic, inert, and unimaginative on the other). More relevant to the alloplastic-autoplastic hypothesis are the receptive and exploitative orientations. The receptive orientation includes mostly autoplastic qualities (passive, submissive, servile, cowardly, spineless, gullable, and sentimental). The exploitative orientation is mainly alloplastic (exploitative, aggressive, egocentric, arrogant, seducing). Scoring of the interpretive questionnaires indicated that 44% of the villagers tested were primarily receptive; only 11% were exploitative. Seventy-one

Percent of the villagers showed some receptive tendencies; only 26% were somewhat exploitative.

Although the Fromm and Maccoby study clearly supports the alloplastic-autoplastic hypothesis, it suffers from a number of weaknesses. First, there is no control group. Dr. Guillermo Davila intended to use the same methods to compare the village population with workers from Mexico City. Unfortunately, Dr. Davila died before his work was completed. With no control group, we can only wonder about the extent to which the Fromm and Maccoby findings are a function of the population studied as opposed to the method used. A second methodological weakness was that although scorers were trained for a year in seminars, they nevertheless reached only low agreement. Reliability for two scorers was significantly above chance ($p<.01$), but reached only .65. The percentage of agreement between scorers on the presence of the exploitative mode was 72; the percentage on the receptive mode was 83.

The lack of controls and not very impressive scorer reliability are compensated for somewhat by the intensiveness of the interviews and by the internal consistency of the study. Other parts of the study relate the receptive orientation to the history of the feudal structure of the Mexican society as a whole. Peasants are described as passive or inactive in productiveness; submissive in sociopolitical relations, and low in enterprise energy. A reliable measure of relative prosperity significantly negatively correlated with receptive tendencies. It was also demonstrated that the receptive villagers, significantly more than the exploitative villagers, were likely to plant sugar cane and thus forfeit profits in exchange for the security offered by a powerful organization.

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3. Diaz-Guerrero: The Active-Passive Transcultural Dichotomy. In 1963 Diaz-Guerrero, head of experimental psychology and personality measurement at the National University of Mexico, proposed an active-passive dichotomy which he believed differentiated Americans from Mexicans. Before then, psychological research was almost non-existant in Mexico. Diaz-Guerrero's original statement of the transcultural dichotomy (1965) is almost identical to the alloplastic-autoplastic hypothesis: when faced with stress, active persons change their physical or social environment and passive persons modify themselves. Since his original formulation of the active-passive transcultural dichotomy, Diaz-Guerrero and his co-workers have attached a great many meanings to the active and passive syndromes. Diaz-Guerrero (1967) gave a seminar at the Department of Educational Psychology, University of Texas, in which he and his students developed a list of 112 qualities describing the active and passive syndrome. The qualities go beyond the simple alloplastic-autoplastic hypothesis. Beside autoplastic behaviors, the passive syndrome includes a greater amount of verbalization, ambivalence in respect to love, more variable time estimation, civic interest, expressiveness, high expectations from love and romance, preference for slowing down life's developmental stages, modification of others so that they might modify surroundings, and minimization of negative aspects of humans. Beside alloplastic behaviors, the active syndrome includes interest in money; more accurate time estimation; low expectations from love and romance; tendency to be frank, to say truths and truisms that hurt; and the tendency to maximize negative aspects of humans. Diaz-Guerrero (1967) has shown that after a great deal of discussion regarding the active-

passive cross-cultural dichotomy and after reading papers by Diaz-Guerrero, students of the Socio-Cultural Premises Seminar could distinguish active and passive attitudes with reliability. Diaz-Guerrero interprets this as an indication of the face validity of these differences. A more parsimonious explanation is that graduate students are capable of learning.

In a more sophisticated approach to demonstrating the validity of the active-passive syndromes, Diaz-Guerrero (1971, 1972) and his co-workers administered a forced choice verbal questionnaire, containing 60 pairs of statements, to eight national samples, each containing 400 14-year-old children. Samples were from Mexico, Japan, Brazil, Italy, Yugoslavia, England, and two United States cities: Austin and Chicago. The "Views of Life" questionnaire contains 22 subsyndromes of the active-passive syndromes, including locus of control, action, task achievement v. interpersonal relations, competition v. cooperation, independence v. interdependence, earned v. bestowed status, confrontation v. avoidance, self v. other initiation, self v. other solver, self v. joint implementation, cautious v. bold, instrumentality v. fantasy, emotional control v. emotional uncontrol, exaggeration of activity and passivity under stress, positive v. negative self concept, and view of life. The questions are straightforward; there is no inclusion of validity items. It is not clear the extent to which the "view of Life" instrument measures real as opposed to ideal behavior. For example, the measure of competition v. cooperation consists of two questions:

1. Difficult problems are solved best by cooperation.
   Difficult problems are solved best by competition.
2. Competition is better than cooperation to get things done.
   Cooperation is better than competition to get things done.

The relation of agreement with these statements and behavior in real life situations is undetermined. The Diaz-Guerrero group does have plans for future research which will include group measures of aptitude, achievement, personality, and cognition. Data from the scales relating to the alloplastic-autoplastic hypothesis is not yet available.

Diaz-Guerrero's (1967) claim that "Mexico may be the model for the passivity syndrome," has received some experimental support. Hereford, Selz, Stenning, & Natalicio (1967) gave fifth grade Mexican and fifth grade United States upper middle class school children (modal age: 14) sentences designed to measure active and passive orientations. A child was considered active if he described himself as like a child who 1) attempts to change his parents' minds by proving they are wrong; 2) says he is not afraid of anything; 3) decides for himself how to use his time; 4) talks in front of class inspite of fear; 5) talks back to his teacher; 6) makes friends quickly; 7) practices after failure; and 8) hits his brother after being scolded for not watching him. A child was considered passive if he described himself as like a child who 1) is not afraid when his parents are near by; 2) prefers teacher help to independent work; 3) tolerates the meanness of his younger sister; 4) rationalizes his fear of deep water; 5) saddens following the anger of his teacher; 6) pretends lack of comprehension of his teacher rather than admitting lack of knowledge of subject matter; 7) passively endures hits from his older brother; 8) waits for help. Results indicated that the Anglo American children preferred active over passive responses in a ratio of nearly two to one in contrast to Mexican children who divided their responses nearly evenly

between the two types. This interaction was statistically significant ($p<.01$). The Herford et al., study gains some strength from the wide variety of behaviors described, and thus supports the broad active-passive dichotomy proposed by Diaz-Guerrero. The study is weakened because the active and passive behaviors are not opposites, and it is impossible to determine whether the content of the questions or the active-passive dichotomy is responsible for the cultural difference. A stronger statement might have been made by forced choice comparisons (e.g. trying to change parents' mind v. obeying them.) Further, the scale has only face validity; there is no assurance that more than verbal statements are measured. This approach is particularly risky considering the difficulties of translation.

Another source of support for the active-passive transcultural dichotomy comes from use of the Holtzman Inkblot Technique. Swartz (1967) reports that children in the United Stated "tend to deal with the stress associated with taking a test...in a much more active manner than the Mexican children, who, conversely, seem to endure the test-taking situation much more passively." Austin children had faster reaction times, failed to give responses fewer times, used larger portions of the inkblot, gave more definite form to their responses, and integrated more parts of the inkblots. If the responses to the inkblots are taken as behavioral samples, it is clear support for the greater activity of the Anglo-American children.

Diaz-Guerrero's general notion of an active-passive dichotomy in which rural Mexican's are more passive than urban Anglo Americans gains support from a number of other sources. In the Fromm & Maccoby (1970)

study of character, the villagers are repeatedly referred to as passive. Michael Maccoby (1964) states that "the concept of love most often stated by villagers reflects the feeling that all good things of life lie outside oneself, beyond reach; one must await passively the experience of happiness or love, being grateful if it arrives but without power to keep it." An analysis of the Spanish and English languages would surely reveal a greater reliance on the passive tence in Spanish. The greater activity of urban over rural people is attested to by a number of authors. Erich Fromm (1957) claims that urban society centers on the marketplace where learning to manipulate others is of paramount importance. Abraham Maslow (1954) and others say that Western culture rests generally on Judeo-Christian theology, and the United States is dominated particularly by a puritan spirit which stresses activity, striving, and hard work. Stanley Milgram (1970) summarizes a number of studies which show that city people more than rural people are less willing to loan a stranger time, help, information, or things. City people may be described as less autoplastic in these exchanges.

Clinical literature also fits the general hypotheses that urban and middle income classes are active in contrast to more passive low income rural folk. Finney (1969, p. 243) notes "The hysterical person tends to think of himself as a passive participant, while the compulsive person thinks of himself as being in control of what he does throughout life." He cites data of Hollingshead and Redlich (1958) which demonstrates the hysterical personality to be commoner in lower classes, the compulsive personality commoner in middle classes. Further Finney describes a

factor analytic study which demonstrated White Anglo-Americans to be the most energetic, assertive, and aggressive of 11 subcultural groups studied in Hawaii. In contrast, Hawaiians and Koreans were the most complaint. Oscar Lewis (1959, 1969) also describes passivity as one of the defining characteristics of the "culture of poverty".

4. Maccoby and Modiano: Cognitive Styles. Michael Maccoby & Nancy Modiano (1966) have demonstrated that Mexican village children tend to see and classify objects in a perceptual or concrete manner significantly more often than urban children; urban children use significantly more abstract and functional classifications. Seventy percent of the rural children tested used concrete classifications; urban children were approximately evenly divided between concrete and abstract classifications ($p < .01$). Seventeen percent of the city children, but no village children used only abstract classifications. In another study 70% of the North American children tested analyzed objects in terms of what they could do with them; only 26% of the village children were similarly functional (Maccoby, Modiano, & Galvan, 1963). Whereas city children would typically classify a banana, orange, bean, and meat as alike because they are all foods, a village child said, "All of them can be eaten, but they are not alike because meat is not round, nor is it like a banana or bean."

With only a small jump, these findings can be seen to support the alloplastic-autoplastic hypothesis. Rural Mexicans in these studies tend to accept things as they are and make greater perceptual contact. Urban children tend to manipulate things in a formal and increasingly reductionist manner. Urban children are cognitively alloplastic, they more things

about, compare them to external standards, analyze them with an eye for how they can be used. To quote Maccoby & Modiano (1966, p. 261), "The American child is taught to abstract, to manipulate concepts, to control things. He is a member of a culture that prides itself on its power over nature. Almost as soon as he learns what things are, he is taught what he can do with them..."

The cognitive style work indicates that with respect to their emphasis on perceptual properties, rural Mexican and urban children are not significantly different at age six. But with growth, the rural Mexican child moves toward greater perceptual subtlety, and the urban child moves toward greater abstraction. Maccoby & Modiano (1969) make the point that each culture promotes a different mode of maturity. They claim that the rural child does not remain at a lower level of cognitive development, for the rural child develops " a cognitive style that with subtlety and profundity responds to the reality of the peasant culture. The peasant child's concreteness ill-equips him to operate within a highly rationalized industrial society, but at the best he maintains a deeper relatedness to his world, less alienated thought, and a poetry of language and experience that is expressed in peasant concepts of love." Others have been more skeptical. Greenfield, Reich, & Oliver (1966) describing similar differences among the rural and urban children of Senegal, Mexico, and Alaska, quote Heinz Werner who speaks of "a relatively early arrest of the processes of intellectual growth."

5. Kagan and Madsen: Cooperation and Competition. In a series of experiments Kagan & Madsen (1971,1972,1972 in press) have demonstrated and analyzed the difference between urban Anglo-American and rural Mexican children in cooperation, helpfulness, competition, and rivalry. The differences are clearly supportive of the alloplastic-autoplastic hypothesis. In these social interaction situations in many ways Anglo American children more often than Mexican children attempt to make their peer adjust to their own needs. They are more often competitive, they more often make conflict moves, they more often take another child's toy away, and they more often block the progress of another child toward his goal. Mexican children, in contrast, appear clearly more autoplastic. They more often step aside to avoid conflict; they more often submit to the rivalrous intent of a peer. It appears that the Mexican children do have a fair amount of competitive motivation, but they do not give expression to their competitive impulses in social interaction situations. It is as if their preference for autoplastic adaptation supercedes their competitive motivation. Kagan and Madsen have demonstrated that the cultural differences are quite robust: they persist under a number of methodologies, under a number of verbal and behavioral instructional sets, and under conditions in which they are non-adaptive in terms of obtaining the goals for which the children are striving. Further support is given to their work by several studies which include a Mexican American sample: Mexican Americans in all situations tested appear to adapt in a way which is a compromise between the Anglo-American and rural Mexican modes (Kagan & Madsen, 1971; Madsen & Shapira, 1970).

Interestingly, the Kagan & Madsen work provides one example of a situation in which the alloplastic-autoplastic hypothesis generates a different prediction than an interpretation of the active-passive dichotomy. Kagan & Madsen (1972, Experiment 4) studied pairs of children as they moved markers on the circle matrix board. The first child to reach a goal each trial received a toy. The markers were placed so that they blocked each other and for either child to obtain a toy, one child had to move aside. The children in this situation were forced to choose between moving and not moving. If a child moved aside, he necessarily allowed the other child to obtain the toy. On the basis of the active-passive dichotomy, one might predict that the rural Mexican children, being more passive, might not move. The alloplastic-autoplastic hypothesis, however, clearly predicts that the Mexican children would move more often because moving aside is the way to adjust oneself to the press provided by the peer. The rural Mexican children did in fact move aside more often -- some of them did so on almost every trial, allowing their peers to obtain almost all the toys. Urban Anglo Americans, in contrast, significantly more often received no toys because both children of the pair refused to move aside.

The cooperation-competition literature also bears on the issue of whether the alloplastic-autoplastic difference is transcultural as Diaz-Guerrero states, or whether it is only primarily an urban-rural difference. Madsen (1967) demonstrated that the difference, at least with regard to competitiveness, is not transcultural. Mexican city children in his study, like urban children all over the world, were far more competitive than rural Mexican children. Other studies have shown that rural children in Holland, Spain, and Korea tend to be non-competitive--much as were rural Mexicans.

Although the urban-rural factor appears to account for the major source of the variance in cooperation-competition differences, both cultural and economic factors also account for some variance. Kagan and Madsen (1971) found Mexican American children to be less competitive than Anglo American children living in the same city and at the same economic level. Madsen (1967) found poor Mexican city children to be less competitive than rich Mexican city children.

Interestingly, the cooperation-competition findings parallel the results of cognitive styles research. Maccoby and Modiano (1966) also found that the children in Mexico City perform much as Anglo-American city children--children of both groups prefer more abstract and functional classifications than do rural Mexican children. Greenfield, Reich, and Oliver (1966) note similarities between the village children in Alaska, the unschooled Wolof children, and Mexican village children. An urban-rural dichotomy clearly fits both the cooperation-competition and cognitive styles literature better than a transcultural dichotomy.

The developmental trends in competition and rivalry also parallel the trends noted in the cognitive styles research. In both cultural groups there is little competitive and rivalrous behavior or abstract and functional classifying before age six, but those behaviors increase in both cultural groups beyond age six. Beyond age six, however, city children show a far steeper rise than rural children in competition, rivalry, abstraction, and functionalism. Thus both the cognitive styles research and the

competition findings show a similar interaction which may be interpreted either as a developmental lag or as a difference in preference for different modes of adaptation. This critical interaction, which begins at age six, parallels yet another cultural difference--intensity of obedience training, possibly the most important cross cultural difference in parental influence.

6. Parental Influences. M.E.P. Seligman (1971) has developed the learned helplessness hypothesis to explain human depression. He has demonstrated that the learned helplessness of animals in laboratory experiments is similar to human depression in its behavioral symptoms, etiology, physiology and psychopharmacology, cure, and prevention. Both the helpless animals and depressed humans are characterized by passivity, reduction of spontaneous activity, decreased aggressiveness, a tendency to give up in the face of difficulties, insensitivity to response reinforcement contingencies, a sense of helplessness and powerlessness, and an inability to make decisions. In other words, learned helplessness leads to an extreme autoplastic mode of adaptation and a lack of alloplastic behavior. Learned helplessness occurs whenever there is an independence of the behavior of the organism and its environmental reinforcers (Seligman, Maier, & Solomon, 1971).

Julian Rotter (1966) has reviewed studies of internal and external locus of control -- belief in whether or not one's own behavior, skills or internal dispositions determine the reinforcements one receives. Like learned helplessness, a sense of external control leads to passivity and an autoplastic orientation. Rotter (1966) reviews the literature showing that those believing in the effectiveness of their own behavior manifest

greater active mastery of their environment and less yielding to environmental presses. Subjects with a sense of internal locus of control better learn response contingencies to cope with potentially threatening stimuli, more often try to better their real life situations, remember more information which can be of use in controlling their lives, are more politically active, and are more effective in changing the attitudes of others. Not only do internals more often attempt to control their environment; they are more resistent to being controlled by it. Those who refuse to yield to external influences are more internal than yielders. Internals are even negativistic: they show less behavior in the direction of the experimenter influence than both externals and controls. Like learned helplessness, external control is likely to occur when a child learns he cannot control his environment -- that is, when there is an independence of what he does and what happens to him.

Madsen and Kagan (1972, in prep.) examined the difference between the way rural Mexican and urban Anglo American mothers reinforced their children in an achievement situation. They found that rural Mexican mothers reinforce their children independently of the child's behavior. In contrast to urban Anglo American mothers, who give more rewards for successes than failures, and more rewards for difficult than easy successes, Mexican mothers reinforce their children independent of the child's performance. In the achievement situation studied, rural Mexican children learn that what they do is independent of what they get -- succeed or fail they receive the same, their behavior cannot control their reinforcements, they are helpless. Urban Anglo American children learn that what they

get is a strict function of what they do; they alone control their reinforcers. Thus the Mexican mothers in the Madsen & Kagan achievement situation train helplessness in contrast to the Anglo American mothers who train effectiveness. If these cultural differences are demonstrated to be true generally, they may explain the origins of the alloplastic-autoplastic differences.

Obedience training may be seen as training in learned helplessness or external control or as direct training in autoplastic behavior. Whichever the case, strict obedience training is likely to produce a generalized set for autoplastic behavior. And rural Mexican parents put a great emphasis on obedience training in contrast to the minimal emphasis of Anglo American parents. Minturn and Lambert (1964), in their study of six cultures, found stress on obedience highest among Mexican mothers and lowest among Anglo American mothers. Almost every anthropological account of the rural Mexican culture stresses the importance of obedience training. Lewis (1960, p. 59) states that "Tepoztecan children are brought up to obey their elders and to submit to the will of their mother and father as long as they live under their parents' roof. From infancy on, they are encouraged to be passive and unobtrusive..." Lewis states that

children are literally beaten into submission, beginning at age three or four, but that obedience training is intensified around age six. Fromm and Maccoby (1970, p. 183) state that "The cultural emphasis on obedience begins to be felt by children increasingly from the age of 2 on." The parents and teachers of Las Cuevas believe that the ideal way to be with children is strict. Fromm and Maccoby also note an intensification of obedience training around the age of six or seven, at which time disobedience is the only behavior always punished. Maccoby (1964, p.342) also notes that "After the age of six, when the boys must work in the fields and the girls in the household, the child is expected to obey without question. He is taught that what is right is what his parents consider right."

The parallels between the cultural differences in obedience training and the differences in behavioral and cognitive functioning are striking. At the age of two obedience training begins with increasing intensity in the rural Mexican family; before then rural Mexicans are more permissive than Anglo American city parents. Maccoby and Modiano (1962) have shown that babies in rural Mexico score as well or better than urban Americans in intelligence up to age two. Beyond then, with age rural Mexican children fall increasingly behind their urban Anglo American counterparts. At age six obedience training is sharply increased in the rural Mexican home. Interestingly, Erik Erikson (1963, p. 225) notes age six or seven is the time when children begin to develop a new sense of initiative. Jean Piaget (1955, 1967) has shown that this is the age when children begin to think for themselves and question the authority of adults. It is at this time when Mexican parents begin to intensify

their obedience training. And it is at this time when the cultural differences between Anglo American and rural Mexican children begin to appear in the cognitive styles research as well as in the competition research. The coincidence of all of these differences gives support to the notion that the obedience training of the rural Mexican parents, perhaps mediated by a sense of learned helplessness or external control, retards a developmental process which would otherwise occur.

Children's games in the United States and in Mexican villages both reflect and impress different orientations toward authority. Maccoby, Modiano, and Lander (1964) analyze these differences. Their work is summarized in Fromm and Maccoby (1970, p. 188) who state that in the United States "the symbolic content of central-person games teaches the child that the central person, the authority, can be vanquished if the children are able to cooperate with each other. For the child in these societies, central-person games have the function of dissolving the infantile submission to adult authority and reinforcing the ethic of fairness and reciprocity." In contrast,

> "In village games, the child does not learn this attitude. Rather, the traditional authority of parents and the group are impressed upon him. The individual is shown to be weak when he stands alone, strong when he can use force or is part of the group. In the game of burnt leather, a belt is hidden and the one who finds it chases after the others, who flee to the base line. The one with the belt may whip all those who have not reached safety. The moral is that authority is irrational and punishing; one can neigher reason with it nor overcome it. The best strategy is to get as far away from it as you can, unless you can join it. In a village version of hide-and-seek, the central person is chased and hunted down by the others. The moral is that the deviant is not tolerated; one must join the consensus."

The emphasis in the Mexican culture on obedience may be responsible for the differing meanings of "respect" ("respetar") for Mexican and American students. Although the Spanish and English words are of identical origin, similar form, and dictionary definition, Robert Peck (1963) found that students from the University of Mexico had quite different conceptual associations to the word than did the students from the University of Texas. Peck had the students check meanings associated with the word "respect", from a list of 20. Mexican students significantly more often than Anglo American students checked the following meanings: awe; fear; love; affection; expect protection from; feel protective toward; dislike; don't trespass on rights; have to obey, like it or not; duty to obey; don't interfere in other's life. In contrast, Anglo Americans significantly more often checked; look up to with admiration, treat as an equal, give the other a chance, admire, consider other's ideas. Apparently respect, obedience,and fear are closely associated for the Mexican students, who generally have more affective associations to the word "respect." Anglo Americans show more of a sense of consideration and equality.

Several studies within the United States support the hypothesis of a general relationship between obedience training and autoplastic behavior. Conformity is autoplastic behavior in which the individual adjusts himself to the press provided by a group. Block (1955) has shown that the fathers of conformers, when compared to non-conformers, are distinctly more restrictive in their attitudes toward child rearing. Persuasibility is a similar autoplastic characteristic, and King (1959) demonstrated that those susceptible to opinion change more often described their parents as dominant and

expecting them to obey without questioning. Interestingly, non-persuasibility correlates with self-assertiveness -- a finding we might expect if non-persuasible subjects are more alloplastic. Field independence is alloplastic behavior in which the individual does not go along with an environmental press but rather adjusts the environment in accord with his own needs. Witkin (1954) summarizes data showing that field dependent children have been subjected during growth to strongly restrictive parental pressures; they are more often punished for aggression or assertive behavior. Achievement behavior is yet another alloplastic behavior in which an individual acts on the world based on his internal needs. McClelland, Atkinson, Clark, and Lowell (1953, p. 202) state "mothers of sons with low n Achievement tend to demand less in the way of independent achievement at an early age, and tend to be more restrictive than other mothers."

Instrumental aggression may be classified as alloplastic behavior because it involves acting on the environment with the aim of changing it in accord with ones needs. Expressive aggression is a refusal to be autoplastic, a refusal to adjust passively to environmental presses. Parental permission or encouragement of aggression would thus appear likely to enhance alloplastic tendencies. Minturn and Lambert (1964) note "the mothers of the Mexican sample discourage peer to peer aggression more than any other group and the mothers of the United States encourage such aggression more than any other group." It has been noted also that middle class more than lower class mothers within the United States permit significantly more aggression against parents (White, 1957). Kearns (1970) notes that permissiveness for aggression, restrictiveness, and parental

demands that a child be aggressive are the factors which most significantly distinguish Anglo American and Mexican parents. These studies are all consistent with the hypothesis that restricting aggression is one of the ways rural Mexican mothers enforce an autoplastic orientation in their children, in contrast to Anglo American mothers who encourage an alloplastic orientation by encouraging aggression.

EXPERIMENT 1: FIELD DEPENDENCE

There is considerable evidence that the rod and frame task measures differences in the alloplastic-autoplastic continuum. In their early presentation of the field-independence-dependence concept, Witkin Lewis, Hertzman, Machover, Meissner, and Wapner (1954) nearly equated field dependence with an autoplastic orientation and field independence with an alloplastic orientation. They stated,

> "...we have found that the extent of activity in dealing with one's environment is the characteristic that most effectively discriminates among people with different modes of perception. The attitudes and behavior involved represent two more-or-less opposite trends: one, passivity, is associated with field dependent perceptual performance; the other, activity, is associated with independent or analytical perceptual performance. Passivity signifies inability to function independently of environmental support, or absence of initiating activity, and a readiness to submit to forces of authority." (p. 467).

As support for the greater passivity of field dependent subjects, Witkin, et. al. (1954) note that, more than their field independent counterparts, field dependent subjects spontaneously assume a more passive stance, create TAT stores with central characters with little driving interest in achievement, experience themselves as shorter than they are, impose less structure on ambiguous stimuli, depend more on a "We" than an "I" orientation, lack their own point of view, lack their own interests, and lack initiative. Witkin, Dyke, Paterson, Goodenough, and Karp (1962) provide more evidence for the greater passivity of field dependent subjects. More often than field independent subjects, field dependent subjects give fewer assertive movement responses on the Rorschach, and are passive observers in

their dreams. Further, they less often use verbs of action. Among patient populations, those who are more dependent, passive, and helpless tend to be field dependent; those who are expansive and euphoric tend to be field independent. Sanguiliano (1951) notes that field dependent women patients showed greater passivity and compliance in accpting testing, but that they were more active than field independent patients in seeking the examiner's acceptance. In this respect it appears that "alloplastic-autoplastic" rather than "active-passive" might better fit the distinction between field independent and dependent subjects.

Several authors have demonstrated and discussed the similarity of field dependence to global cognitive style. Witkin, et. al., (1954) found a significant correlation between field dependence and global cognitive functioning. Kagan and Moss (1960) found those with a global cognitive style to be less clear in their descriptions of Rorschach ink blots, and they were blindly rated as less able to describe their experience, less active, less striving, and more dependent. Kagan and Moss hypothesized a stylistic dimension of cognitive effort, articulation, and analysis v. cognitive passivity, diffuseness, and global reaction. Faterson (1962) has shown field independence relates to a large variety of intellectual tasks which have as their basis the ability to analyze or impose structure. She found the embedded figures test; WISC Block Design, Picture Completion, Object Assembly; Dunker-type problem solving, and the Thurstone-Gottschalk to relate to field dependence in the predicted directions. Children with a global field approach were described as "passively accepting the prevailing organization of a structured field, leaving 'as is' stimulus material that is unorganized." Leaving unstructured material 'as is' is one of the qualities which best describes

the performance of rural Mexican children in the cognitive styles experiments of Maccoby and Mociano (1966, 1969).

Rotter (1966) recognizes the theoretical similarity of field independence-dependence and internal-external locus of control, but he notes that in an unpublished study he found no relation between a measure of IE and the Gottschalk Figures Test, a measure of field orientation. Field dependent subjects, however, have been found to be more conforming (Linton, 1955; Gerard, 1969) and less achieving (Wertheim & Mednick, 1958; Gerard, 1969). Although no published study of field independence-dependence compares urban Anglo American and rural Mexican children, Mexican American children are reliably more field-dependent than Anglo American children (Canavan, 1969; Ramirez, Price-Williams, and Beman, In Prep.).

Seder (1957) has collected data on the child rearing practices of field-dependent and field-independent mothers, and the data is consistent with the alloplastic-autoplastic hypothesis. Mothers of field dependent children, more than mothers of field independent children, are themselves less assertive and more passive (present an autoplastic model), stress conformity and authority and push their children toward parent determined goals (demand autoplastic behavior), and they are less consistent in their rearing methods (train learned helplessness or external control).

In Witkin's Rod and Frame task (Witkin, et. al., 1954; 1962) the subject is instructed to align the rod upright, ignoring the tilting frame. The task was designed to measure the extent to which subjects are capable of ignoring environmental influences and attending to internal cues -- in this case one's internal sense of the true upright. The alloplastic-autoplastic hypothesis makes a clear prediction

of behavior in the rod and frame task: alloplastic urban Anglo American subjects should adjust the rod according to their internal sense of the upright; autoplastic rural Mexican subjects should be more influenced by the environmental press provided by the tilting frame.

Method

Subjects. Sixteen rural Mexican and sixteen urban Anglo American children, ages 7-9 years, participated in the experiment. Both cultural groups were equally divided by sex. The Anglo American subjects were enrolled in daycare centers in Los Angeles, California. They were children of working mothers of lower economic status. The Mexican children were residents of San Vicente, a small town (population 800) 54 miles south of Ensenada, Baja California. San Vicente is the city of previous research by Kagan and Madsen (1971, 1972, 1972 in press), Madsen (1971), and Madsen and Shapira (1970), which demonstrates San Vicente children to be less competitive, less rivalrous, and more avoidant of conflict than Anglo American children. San Vicente has a number of small retail business establishments, but the economy is essentially agricultural. The economic standard of living in the homes of the San Vicente children tested is below that of the Anglo American children.

Apparatus. A "Man in the Frame" box, adapted from Witkin's rod and frame test for use in the Riverside School Desegregation Study[1] (Gerard, 1969) was used to measure field independence-dependence. The box is 48" long, 18" high, and 18" wide. It contains at one end a luminous silhouette of a man surrounded by a luminous square frame.

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[1]The author is grateful to Dr. Harold Gerard and Dr. Jerold Green of the Riverside School Desegregation Study for their kind permission to use a "Man in the Frame" box in the United States and Mexico.

The tilt of both the figure and frame can be adjusted by the experimenter from the rear of the box. The tilt of the man can be adjusted also by a knob in the front of the box controlled by the subject.

Procedure. Subjects were seated on a chair facing the box. The chair was elevated so that all subjects had their feet dangling above the ground. Subjects were instructed to look into the opening in the front of the box and to say what they saw. While doing so the Experimenter covered the child's head with a light shield so that only the luminous man and frame were visable.

After the child responded that he had seen a figure and a frame, the Experimenter told the child to "Ignore the frame and pay attention only to the man. Now, turn the knob in front of you to make the man stand straight up. Remember, ignore the frame and make the man stand straight, as if he were standing in this room." If a child showed complete field-dependency, aligning the figure to the frame completely, the instruction to ignore the frame was repeated.

Four combinations of man and frame tilts were used in the same order for each child: frame 28 degrees left, man 28 degrees left; frame 28 degrees right, man 28 degrees left; frame 28 degrees left, man 28 degrees right; and frame 28 degrees right, man 28 degrees right.

Results

For each child a field dependency score was obtained by averaging the number of degrees error from true upright in the direction of the tilting frame for the four rod and frame combinations. Tilt in the direction opposite the frame's tilt were not considered errors. Anglo American children averaged 5.7 degrees error per trial; Mexican children averaged 11.0 degrees error per trial. This difference is statistically significant, $p < .01$ Mann-Whitney U test.

This cultural difference in field dependency is also reflected in the number of children averaging over ten and under three degrees error per trial. Only two Anglo American children, in contrast to seven Mexican children, averaged over ten degrees error per trial. Only one Mexican child, in contrast to six Anglo American children, averaged under three degrees error per trial. These differences are significant trends, $p < .10$ Chi Square.

Children of both cultures showed considerable range of individual differences. In the United States children obtained field dependency scores ranging from .75 degrees to 19.0 degrees. In Mexico the range extended from 2.75 to 25.25 degrees.

Girls and boys did not differ significantly in either culture.

Discussion

Behavior of the children in the rod and frame task is clearly consistent with the alloplastic-autoplastic hypothesis. The rod and frame task presents subjects with a clear conflict between internal and environmental cues. A preference for resolving conflict by relying

on internal cues (internal sense of the upright) would lead to field independence; a preference for resolving conflict by relying on environmental cues would lead to field dependence. That rural Mexican children are more field dependent than urban Anglo American children is thus consistent with the hypothesis that the rural Mexican children are more influenced by environmental presses than are their urban Anglo American counterparts.

The rod and frame task is a good test of the alloplastic-autoplastic hypothesis in that failure to find the rural Mexican children more field dependent would indicate very serious limits in the predictive ability of the hypothesis. The established associations between field independence and various alloplastic behaviors give support to the theoretical construct. The rod and frame task is, however, certainly a very limited test of the hypothesis, for the greater field dependence of rural Mexican children could be predicted in the absence of the alloplastic-autoplastic hypothesis. Child rearing data, class data, cultural comparisons within the United States, and the cognitive style research of Maccoby and Modiano (1966, 1969) each provide a basis to predict that rural Mexican children would be more field dependent than urban Anglo American children.

Although Witkin et al. (1962, p. 221) have reported sex differences in field dependency in children as young as eight years, they note that these differences are relatively slight compared to the range of individual differences within each sex. Thus, it is not suprising that significant sex differences were not found in samples of only eight boys and eight girls.

EXPERIMENT 2: CONFORMITY

The group is for the subject of a conformity experiment what the tilted frame is for the subject in a field-dependency experiment. The group and the tilting frame both provide an external frame of reference which contradicts one's senses or interanl frame of reference. At a conformity choice point, those favoring an autoplastic orientation should follow the group; those favoring an alloplastic orientation should follow their own senses.

There are several sources of empirical evidence that conformity is in fact associated with a general preference for autoplastic adaption. Conformity is associated with field dependency (Linton, 1955; Gerard, 1969) reluctance to express anger (Breger, 1963); low n Achievement (McClelland, 1953); high dependency (Kagan and Mussen, 1956); high need for approval (Moeller and Applezweig, 1957; Becker and Carroll, 1962; Marlow and Crowne, 1961; Hardy, 1957; Crowne and Liverant, 1963; Walker and Heyns, 1962; and Strickland and Crowne, 1962); and external locus of control (Crowne and Liverant, 1963). Asch (1956, p. 33) also noted the frequency of external attributions of yielding subjects who attributed their errors to circumstances outside themselves.

Mussen and Kagan (1958) in a blind analysis of TAT stories found all but one conformer showed themes of parental punishment; almost none of the independents showed such themes. Mussen and Kagan thus found support for the hypothesis that "the conformists' submissiveness -- reflected in his behavior in experimental conformity situations -- may stem from his parents' early overly rigid and punitive treatment which prevented him from developing independence of thought and action (p. 57)."

Block (1955) found fathers of conformers more than fathers of independents were more restrictive in their attitudes toward child rearing. McClelland (1961) provides evidence for the greater emphasis on obedience among mothers of conformers. These findings are consistent with the greater emphasis on obedience among the parents of autoplastic oriented subjects in general.

Richard Crutchfield (1955) presents evidence that conformists in contrast to independents are submissive, compliant, and overly accepting of authority; have a narrow range of interests; overcontrol impulses and inhibit themselves; are unable to make decisions; become unable to cope under stress; and are suggestible and overly responsive to other people's evaluations rather than their own. Clearly, conformists are more autoplastic and less alloplastic than independents. A conformity choice point is thus a second clear test of the hypothesis that urban Anglo Americans favor an alloplastic mode of adaption in contrast to rural Mexicans who are more autoplastic.

Method

Subjects. Subjects were sixteen rural Mexican children from San Vicente and sixteen urban Anglo American children from daycare centers in Los Angeles, ages 7-9, equally divided by sex.

Procedure. Each subject was seated with three other children of his age. The children were each given books with four lines on a page and were told to say which of three lines (numbered 1, 2, and 3) was most similar in length to the fourth (comparison) line. The subject of the experiment always answered last, and unknown to all the children, his book differed systematically from those of the other children. Thus, as in the Asch paradigm (Asch, 1956), the subject

was forced to choose between responding correctly or responding as did the group.

Each book had twenty-three pages. Conformity errors increased in severity in three steps over the pages: On pages 4, 6, 7, 9, and 10, any subject answering as the group made an error of one-fourth inch. On pages 11, 13, 14, 16, and 17, conformity responses were in error by one-half inch. On pages 18, 20, 21, 22, and 23, conformity erred by three-fourths of an inch. On the first three pages and on the remaining pages with no conformity error, the correct response in the subject's book was the same as that for the group. The comparison lines varied from two to four inches at each error size; the books were 5 1/2 x 8 1/2" spirals.

After the subject, sitting as the fourth member of the group, had completed all comparisons, the other three children were asked to leave. The subject was then asked to remember the trials on which he and the group differed and to estimate who was more likely in error, he or the group. Finally, the subject was asked to make the comparisons again, alone.

Results

Results are described under the topics of conformity errors, retest control errors, verbal reports, and communications to the deviant. All tests of significance were performed with the Mann-Whitney U test, unless otherwise stated.

Conformity Errors. Considering the fifteen trials on which the group response differed from the correct response for the subject, Mexican children conformed to the group response on an average of 10.4 times; Anglo American children conformed on an average of 5.9 times. This difference was statistically significant; $p < .05$.

The cultural difference interacted with error size. The cultural group did not differ significantly in number of errors on the one fourth inch error size trials. Mexican children conformed significantly more than Anglo American children on half inch errors ($p < .05$); the cultural difference was even greater ($p < .001$) on the three-fourth inch errors.

Table 1

Mean number of conformity errors by Anglo American and Mexican children at each error size.

Culture	One-Fourth Inch Error	One-Half Inch Error	Three-Fourth Inch Error
Anglo American	3.00	1.75	1.19
Mexican	4.00	3.38	3.06

The cultural difference in conformity is reflected also in the number of children always or never conforming. Of the sixteen children tested in each culture, seven Mexican children in contrast to only two Anglo American children conformed on every trial. Five Anglo American children never conformed; all Mexican children sometimes conformed; $p < .05$, Chi Square.

For the children of both cultures the frequency of conformity errors decreased as the size of conformity errors increased. The effect of error size reached statistical significance only for the Anglo American children, who conformed significantly more often on the one fourth inch errors than on the three-fourth inch errors; $p < .01$.

There was no consistent trend for children to conform more or less over trials within any of the three error size blocks. In both cultures girls conformed non-significantly more often than boys.

Retest Control. When children were asked to make the line comparisons in the absence of the group, children of both cultures rarely made any errors. Mexican children averaged 1.06 errors on the retest and Anglo American children averaged 1.13 errors. No child made more than three errors on the retest.

Verbal Reports. Verbal reports were consistent with the behavior of the children: Mexican children more than Anglo American children made statements indicating they had adopted the frame of reference of the group. Nine Mexican and 14 Anglo American children were non-conformist on at least one trial. When asked to remember those trials on which they had differed from the group and to estimate who

was more likely right, no Mexican child stated that he rather than the group was more likely right. Two Mexican children expressed doubt. The remaining seven Mexican children expressed a belief that the group had been correct. Of the Anglo American children, only two stated that the group was more often right; two expressed doubt; and the remaining ten expressed some degree of confidence in their own perception.

Within both cultures there was considerable range in the degree to which children expressed confidence in their own perceptions. During the retest one Anglo American girl who had conformed on every trial remembered the incorrect group response to a three-quarter inch conformity error and stated, "It must be line one (incorrect group response), because thats what they (the group) said." In contrast, one Anglo American boy, who never conformed to the group response, expressed complete confidence in his own perceptions, and correctly interpreted the nature of the experimental situation. He stated, "they have to be different books because they (the group members) aren't that dumb. They should know that this line is bigger than the other two." This boy was the only child in either culture who realized that the other children had books differing from his own.

Communications to the Deviant. In both cultures the three children preceding the subject displayed considerable intolerance of deviant subjects. Their reaction varied from frowns and signs to rather aggressive verbalizations. No attempt was made to control or quantify this disapproving behavior, but the intensity and number of such

verbalizations was clearly greater in the United States. The Comments toward one deviant give the flavor and intensity of such comments:

Following trial 4: "Cris, you picked the wrong number."

Following trial 7: "Why are you picking that?"

Following trial 11: "Cris is getting 'em wrong."

Following trial 16: "Gollyee, Cris!" (With angry tone and gesture.)

Discussion

Experimental conformity paradigms, like field dependence tasks, are traditional choice points in which behavior can be determined by reliance on either internal or environmental cues. In the present conformity situation rural Mexican children more often than urban Anglo American children reacted to conflicting internal and environmental cues by relying on environmental cues. This finding is consistent with the greater field dependence of the rural Mexican children in Experiment 1, and with the autoplastic-alloplastic hypothesis.

The autoplastic-alloplastic hypothesis finds support in a number of ways in the present conformity experiment. Not only did Mexican children more often conform to the group response, they also more often verbalized belief in the correctness of the group. Further, as the peers of Anglo American subjects provided more frequent and more intense conformity pressures than their rural Mexican Counterparts, they demonstrated greater preference for alloplastic adaptation. In face of the greater conformity pressures exerted on the Anglo American subjects, their greater independence may be seen as an even more impressive refusal to be autoplastic. Finally, that the Anglo American children

more than the Mexican children reacted to increasing error size by decreasing conformity may be yet further evidence of the greater weight the Anglo American child places on internal cues: as error size associated with conformity increases, for a child relying on internal cues, there can be no ambiguity with regard to the correct answer.

That the two cultures did not differ in the number of errors in the retest control condition indicates that the cultural differences in conformity is not due to cultural differences in ability to discriminate the lines used in the present task. That there was no trend toward decreasing conformity over trials within error size blocks, is evidence that passage of time or trials was not responsible for the error size effects.

EXPERIMENT 3: PREFERENCE FOR CONTROL

Julian Rotter (1966) has reviewed studies of internal and external locus of control -- belief in whether or not one's own behavior, skills, or internal dispositions determine the reinforcements one receives. Although a belief in internal control is not necessarily associated with a preference for internal control, empirical evidence link the two quite closely.

There is considerable evidence that those believing in internal as opposed to external locus of control are more alloplastic. Phares (1962) showed that subjects who believe they are in a skill controlled situation show more learning of response contingencies which enable them to better cope with potentially threatening stimuli. Internality correlates with the attempts of people to better their real life situations. Seeman and Evans (1962) found internal more than external tuberculosis patients knew more about their condition, questioned doctors and nurses more, and expressed less satisfaction with their treatment. Seeman (1963) found, independent of intelligence, internality among reformatory inmates correlated with memory of information (e.g. parole contingencies) necessary to control one's own life. Gore and Rotter (1963) and Strickland (1965) found internals more than externals of the same race, educational level, and class were more politically active. Phares (1965) found internals more than externals were successful in changing the attitudes of others. Seeman (1964) found Swedish workers high on internal locus of control, more than their external counterparts, significantly more often joined unions, were active within the unions, and knew more about political affairs.

Internals not only more often attempt to control their environment; they are more resistant to being controlled by it. That is, they are not only more alloplastic; they are also less autoplastic. Strickland (1962) found that among those aware of reinforcemnt contingencies in a verbal conditioning task, those who refused to yield to the external influences were more internal than those who yielded. Gore (1962) found that internals were negativistic -- they showed less behavior in the direction of the experimenter influence than both externals and controls.

That an internal locus of control is associated with a general alloplastic orientation also finds support in experimental literature on achievement, conformity, and preference for self-reliance. The "Coleman Report" (Coleman, 1966), based on surveying over 900,000 school children in the United States, concluded that "...a stronger relationship to achievement than...all the 'school' factors together, is the extent to which an individual feels that he has some control over his destiny." Franklin (1963) studied 1000 high school students and hypothesized 17 relationships of the IE scale to achievement related behaviors (doing homework, investigation of colleges). Fifteen of the 17 relationships gave significant differences in the predicted direction. Crowne and Liverant (1963) found internals were more willing to bet against a group. Julian and Katz (1968) showed that internals more than externals prefer to rely on themselves rather than on a supposed more competent partner.

A number of findings indicate that externality is associated with lower socioeconomic status (Battle and Rotter, 1963; Crandall, Katkovsky, and Crandall, 1965; Stephens, 1971; Shaw and Uhl, 1969). Also, Mexican

and Spanish American children and adults have been shown to have a more external locus of control than Anglo Americans (Graves, 1961; Graves, Hanson, and Jessor, 1968; Scott and Phelan, 1969; Stephens, Delays, Lopez-Roig, and Vilez, 1971).

Fromm and Maccoby (1970) speak of the fatilism of rural Mexicans. Oscar Lewis (1969) states that apathy, feelings of helplessness, dependency, and fatalism are among the defining characteristics of the culture of poverty. Cordova (1970) notes that Mexican Americans who identify with family values tend to feel powerless. Kagan (1972) has shown that rural Mexican mothers reinforce their children in a way likely to produce a sense of external control.

A cultural difference between internal and external locus of control is a potential explanation of a number of cooperation-competition findings. Kagan and Madsen (1971) noted that Anglo American children persist in competition to an irrational extent in contrast to Mexican children who avoid competition to an irrational extent. It may be that Anglo-American children persist in irrational competition because they have an almost complete sense of internal control and so fail to see that what they get in a social interaction situation is a function of others as well as themselves. It may be that Mexican children avoid simple conflicts necessary to obtain prizes because they have an almost complete sense of external control and so fail to see the potential effectiveness of their individual efforts.

The hypothesis that urban Anglo Americans are more alloplastic in contrast to more autoplastic rural Mexicans makes no clear prediction about generalized expectancies for internal or external locus of control. The hypothesis does however clearly predict that urban Anglo Americans more than rural Mexicans prefer internal over external control. To test that hypothesis, a novel behavioral choice point was developed, to allow children to express their preference for internal or external control.

Method

Subjects. Subjects were sixteen rural Mexican children from San Vicente and sixteen urban Anglo American children from daycare centers in Los Angeles. Children were ages 7-9 and were equally divided by sex.

Apparatus and Procedure. Each subject sat facing a wheel of chance with twenve equally probable outcomes numbered one through twelve. From underneath the wheel extended a nylon string with a loop on the end which could be grasped and pulled by the subject. The string was attached to a talley counter behind the wheel, out of sight of the subject. Each time the string was pulled with two pounds of force, the talley counter registered. The harder the string was pulled, the further it could be extended. If the string was pulled with six pounds of force, a knot in the string reached an eyelet through which it could not pass, so the string could not be extended further. The six

pounds of force needed to extend the string to its limit was within the easy range of all subjects.

When children were seated, the wheel was spun and the children were shown how it could fall on any number from one to twelve. The experimenter then instructed the children,

> "The wheel will be spun ten times. After each spin, the number showing on the wheel will be written down (paper numbered one through ten was indicated). After all ten spins, we will add up the numbers that have been written down. The more the numbers sum, the more toys you will receive (a variety of inexpensive toys were indicated). Remember, higher numbers will mean more toys for you to keep. Now, take this string in your hand (all children were made to hold the nylon loop). If you wish, when the wheel is spinning, you can try to control it by pulling this string."

Pulling the 'control string' in no way influenced the wheel of chance: the total time of the spins were predetermined at an average of twenty seconds, and the wheel stopped on the numbers randomly. After each trial the talley counter indicated the number of times the string was pulled with at least two pounds force. The experimenter also noted the number of trials in which the string was pulled to its maximum (i.e. the knot reached the eyelet).

After the experiment, children were interviewed concerning their beliefs about the effects of pulling the control string. Each child was asked whether he could control the wheel by pulling the string and what happened when the string was pulled.

Results

Results are described under the topics of frequency of pulls, strength of pulls, and perception of control. Unless otherwise stated, all tests of significance were performed by the Mann-Whitney U test. In both cultures boys pulled the control string harder and more often than girls, but that difference did not reach significance so the sex variable is collapsed in all analyses.

Frequency of pulls. Anglo American children pulled the string significantly more often (average 10.4 times per trial) than the Mexican children (3.8 times per trial); $p < .01$. In the United States no child went the entire ten trials without pulling the control string; in Mexico, five children never pulled the string. In the United States all children averaged more than one pull every two trials; in Mexico only seven of the sixteen subjects averaged that many; $p < .01$, Chi Square. All but two Anglo American children averaged more than one pull per trial; only five Mexican children averaged more than one pull per trial; $p < .02$, Chi Square.

Strength of Pulls. Anglo American children pulled the string to its six pound limit on significantly greater percentage of trials (80.0%) than did the Mexican children (15.6%); $p < .001$. In the United States all children pulled the string to its limit on more than one trial; in Mexico 12 of 16 children never pulled the string to its limit; $p < .001$, Chi Square. All but four Anglo American children pulled the string to its limit on more than half of the trials; only one Mexican child pulled the string to its limit on more than half the trials; $p < .001$, Chi Square.

Perceptions of Control. Post experiment interviews revealed that all of the thirty-two subjects, with the exception of three Mexicans and two Anglo Americans, believed they could control the wheel by pulling the string. This illusion existed even in some of the subjects who never pulled the string. Three of the five children who never pulled the string believed that the wheel could be controlled by pulling the string. One Mexican boy, who stated he believed the wheel could be controlled, gave his reason for never pulling the string: "I wanted to see where it (the wheel) would fall."

Subjects who pulled the string provided various detailed rationalizations of how they controlled the wheel. Some children appeared to indicate a magical connection between pulling and receiving higher numbers, for example, "I pulled it harder and that made me have higher numbers." More common was the belief that pulling the string speeded up the wheel: "When you pull this (string), it makes it go a little faster and then it can go to a high number." Most common was the illusion that pulling the string acted to slow the wheel: "It sort of slowed it down when I pulled it."

Based on their illusion of control, some children devised rather complex strategies to get higher numbers. One Anglo American girl explained her approach, "I waited 'til it was kind of slowing, because then you could see the numbers better. I let it wait a few seconds and when it slowed down then I pulled it. Then it slowed down and I pulled it again and I stopped it. I pulled so that when it stopped I would have more points."

Discussion.

The almost non-overlapping cultural differences in attempts to control a wheel of chance observed in the present experiment indicate that preference for control is a very central cultural difference between United States city children and rural Mexican children. That every Anglo American child and only one fourth of the Mexican children pulled the control string to its limit indicates an almost qualitative difference in the tendencies of the children of each culture to attempt to control their environment. This cultural difference manifested itself in both the frequency and intensity of the children's pulls.

The results of this experiment are consistent with the hypothesis that urban Anglo American children are more alloplastic than rural Mexican children. The experiment represents a different approach to testing the alloplastic-autoplastic hypothesis than do Experiments 1 and 2 because it tests behavior in a situation about which there is no previous empirical evidence. As indicated, however, there are a number of alternative bases for predicting the greater preference for control among the Anglo American children. A number of authors have indicated that Mexican and Spanish-American children are more externally controlled than Anglo American children, and a perception of external control has been related to a decreased incidence of alloplastic behavior.

If the cultures do differ in their perception of control, that difference was masked in the present experiment. Apparently the instructional set and presence of the control string provided sufficient cues

so that almost all children believed they could control the wheel. The present experiment thus indicates a partial independence of perception of control and preference for control. The greater activity of the Anglo American children in attempting to control the wheel of chance cannot be explained by a greater conviction of their ability to control the wheel. Strikingly, both of the Anglo American children who did not believe they could control the wheel nevertheless pulled the string to its limit on every trial. Further, a number of Mexican children who expressed belief that the string could control the wheel, never pulled the control string.

Dissonance theory (Fenstinger, 1957) may explain in part why some subjects had such a vivid illusion of control. It would be dissonant for children who vigorously pulled the control string to believe that pulling made no difference. Given the partial independence of perception of control and preference for control, the dissonance reduction formulation suggests that cultures may influence perception of control in part by influencing preference for control. That is, cultures may differentially induce persons to attempt to control their environment which in turn effects their belief in their ability to control their environment. Rotter, 1966, assumes that behavior is a consequence of cognition. The dissonance interpretation reverses that cause-effect relationship, and merits further consideration as applied to locus of control studies.

The intensity of activity and the complexity of strategies generated by the Anglo American children cannot be explained easily as

mere dissonance reduction. The greater activity of the Anglo American children is perhaps more easily related to a greater desire to succeed at the task (to receive more points or more toys), or a greater preference for control independent of extrinsic rewards. That Mexican children were more often content to "see where the wheel falls" indicates either a lower motivation to obtain control, a greater anxiety about assuming control, or a greater contentment in allowing their outcomes to be determined by external forces.

EXPERIMENT 4: PREFERENCE FOR ASPIRATION AND ACHIEVEMENT

Level of aspiration and level of achievement behavior (as opposed to n Ach) may be seen as verbal and behavioral expressions of the same variable -- how much an individual tries for from the environment. Traditional level of aspiration studies (Rotter, 1942, 1943; Lewin, Dembo, Tamara, Festinger, & Sears, 1944) may be symbolized as of the following paradigm: verbal statement of aspiration -- performance -- verbal statement of aspiration. Early studies measured "goals" or "hopes" of individuals; later experiments investigated "expectations" or "predictions." "Hope" instructions produce higher and less variable scores than "expect" instructions (Fryer, 1964). The hypothesis that urban Anglo American children are more alloplastic in contrast to more autoplastic rural Mexican children makes no clear prediction about either hopes or expectations. The alloplastic-autoplastic hypothesis does, however, make a clear prediction about preference for high or low level of verbal aspiration and behavioral achievement. To test those predictions a novel task was designed to allow children to express those preferences.

Previous investigations of level of aspiration have been conducted in achievement situations in which a high level of aspiration was assumed to be present. Rather than preference for high or low aspiration, investigators concerned themselves with the height and rationality of the hopes or expectations of subjects. Dependent measures in those studies were the number of shifts in aspiration, the number of unusual shifts (down after success, up after failure), and goal

discrepancy (cumulated discrepancy between previous success or failure and subsequent estimates). Patterns of achievement orientation (realistic, stable, and goals appropriately higher than past achievement) over-cautiousness (negative discrepancy, shifts down after success, and lack of stability); and maladjustment (unrealistically high discrepancy, refusal to shift or unstability, and presence of many unusual shifts) have been distinguished by Crowne (1966) and Crowne & Liverant (1963). Crowne, Conn, Marlowe, and Edwards (1969) found that a very high discrepancy score was associated with early obedience training and severity of socialization of aggression. They interpreted a very high discrepancy score as suggesting "the avoidance of self-evaluation by the fantasy-like substitution of goal statement for the realistic appraisal of one's attainment (p. 82)." Patterns of behavior associated with conformity (Crowne & Liverant, 1963; Odell, 1959), and history of success or failure (Jucknat, 1937; Sears, 1940, 1941) have also been distinguished.

Although the high discrepancy score is associated with child rearing practices which are associated with an autoplastic orientation, the alloplastic-autoplastic hypothesis gives no basis for predicting that rual Mexican children would have a high discrepancy score. The hypothesis that rural Mexican children are more autoplastic in comparison to more alloplastic urban Anglo Americans generates only the prediction that rural Mexicans would be likely to have a preference for lower levels of aspiration and achievement.

By measuring preference for aspiration in two conditions, one unstructured and the other structured as an achievement situation,

it was possible to assess not only subjects' verbal statement of preference for level of aspiration and its relation to achievement behavior, but also to measure subjects' behavioral preference for high or low achievement. The extent to which subjects prefer high achievement is reflected in the similarity of behavior in the unstructured and achievement conditions. That is, achievement behavior may be defined as the extent to which subjects spontaneously structured an ambiguous behavioral situation as an achievement situation. This approach to measuring achievement behavior is analogous to the McClelland (1953, 1961) approach to measuring need for achievement, differing in its use of a behavioral rather than projective dependent variable. The present approach is more appropriate for testing the alloplastic-autoplastic hypothesis which does not make a clear prediction about behavior on a projective test, but which does predict the extent to which individuals act from their own (achievement) needs to impose structure on the world.

There is a fairly well established relationship between need for achievement and preference for achievement behavior. McClelland (1961) claims to have confirmed the hypothesis that the need achievement level of a society is significantly related to entrepreneurial economic activity. He summarizes data also on how individuals with high need for achievement start out from various social classes and yet end up more often in positions of managerial leadership. An interesting series of experiments found that across a variety of cultures and age levels those with high need for achievement prefered blues as opposed to reds. Blue, a softer color, holds form poorly, is malleable and is preferred generally as a ground color. Red is

inherently brighter, more rarely found in nature, and more commanding of attention. On this basis, Knapp (1958, p. 372) concluded that it was reasonable to find an association between high need for achievement and preference for blues, because people with high need for achievement "require that their environment be soft while they are 'hard'; they wish to exert their will effectively --- to manipulate, not be manipulated." This formulation of the difference between those high and low in need for achievement is almost identical to the alloplastic-autoplastic conceptualization . Also consistent with the alloplastic-autoplastic conceptualization are the findings that high need for achievement correlates with greater output, greater learning of environmental reward contingencies, better grade getting, and more effort in experimental tasks (McClelland, 1953).

High need for achievement also relates to a number of variables related to the alloplastic-autoplastic hypothesis. As noted, high need for achievement has been related to internal locus of control (Coleman, 1966; Franklin, 1963), conformity in Asch's experiments (McClelland, 1953), and field independence (Wertheim & Mednick, 1958; Gerard, 1969). Zatzkis (1949) found high achievers to prefer more abstract language, a finding which parallels the cultural findings of Maccoby and Modiano (1966, 1969). Knapp and Green (1960) found low achievers more than high achievers become more passively absorbed in distracting music in a time estimation task, and so under-estimate elapsed time. In this situation low achievers may be seen as more field dependent or global because for them figure (time) and ground (music) apparently interact more than for high achievers.

Data on child rearing antecedents of high and low achievement need is also consistent with the alloplastic-autoplastic hypothesis. Winterbottom (1958) found that mothers of sons with high need for achievement tended to expect mastery at earlier ages, encouraged independence more, and were less restrictive generally. Child, Storm and Veroff (1958) found that cultures with parents who were more restrictive and demanding of obedience produced folk-tales containing less achievement imagry. McClelland (1961) reviews a number of other parent studies which associate children's low achievement with paternal authoritarianism, catholic values, and lower socioeconomic class. Rameriz, Taylor, and Peterson (1971) found Mexican Americans lower than Anglo Americans in need for achievement as measured by a projective test.

Method

Subjects. Subjects were 16 rural Mexican children from San Vincente and 16 urban Anglo American children from day care centers in Los Angeles. Children were ages 7-9 and were equally divided by sex.

Apparatus and Procedure: Subjects were seated facing the experimenter with a talley counter in their preferred hand. Subjects held the talley counter so that each time their thumb pressed a lever, the number recorded in the window of the talley counter increased by one. To insure familiarity with the talley counter, all subjects pressed the talley counter 15 times before the recorded experimental trials.

Unstructured Condition. Following the practice presses, the talley counter was set back to zero. Subjects were then told they would be allowed to press the talley counter for 15 seconds, and they were asked, "How many times would you like to press it?" After recording the verbal response, the experimenter asked the subject if he was ready. When the subject indicated his readiness, the experimenter pressed a stop watch and simultaneously told the subject he could begin pressing. Subjects were allowed to press the talley counter as many times as they wished for 15 seconds. After the number of first trial presses was recorded, the talley counter was re-set at zero and the subject was asked how many times he wished to press the talley counter for the second trial. This procedure was repeated for ten trials.

Achievement Condition. After the Unstructured Condition, children received the Achievement Condition. Procedure for the Achievement Condition was identical to that of the Unstructured Condition except that children were told to press the talley counter "as many times as you possibly can." In the Achievement Condition the experimenter did not ask the subjects how many times they "would like to" press the talley counter; he asked instead how many presses subjects "would try for." Before each of the ten Achievement Condition trials children were reminded to try for as many presses as they could.

Results

The effects of culture, sex, and trials were analyzed with respect to 1) performance in each condition, 2) stated level of aspiration in each condition, and 3) the relation of stated level of aspiration to performance. Unless otherwise stated, all analyses were performed by the Mann-Whitney U test.

Performance. In the Achievement Condition every child in both cultures (with the exception of one Mexican girl on three trials) averaged pressing the tally counter over two times per second. In the Achievement Condition Anglo American children averaged pushing the tally counter significantly more (50.8 times per trial) than the Mexican children (44.7 times per trial); $p < .05$). This difference was small in comparison to the cultural difference in the Unstructured Condition.

Table 2

Average number of presses per trial of Anglo American and Mexican children in the Unstructured and Achievement Conditions.

Culture	Unstructured Condition	Achievement Condition
Anglo American	44.0	50.8
Mexican	22.3	44.7

In the Unstructured Condition Mexican children pressed the tally counter about half as often as the Anglo American children; $p < .001$. All but three Anglo American children pressed the tally counter over twice in a second in the Unstructured Condition; no Mexican child did so; $p < .001$, Chi Square.

The difference in performance between the Unstructured and Achievement Conditions was greater for Mexican ($p < .001$) than Anglo American ($p < .01$) children. Fourteen of the 16 Anglo American children showed some overlap between their performance in the two conditions; only 5 Mexican children showed some overlap; $p < .01$, Chi Square. Every Anglo American child pressed in the Unstructured Condition over 70% of what he pressed in the Achievement Condition; only three Mexican children did no; $p < .001$, Chi Square. In the United States no child averaged more than ten points per trial difference between the two conditions; in Mexico all but three children averaged more than ten points per trial difference; $p < .001$, Chi Square.

In both cultures boys pushed the tally counter more often than girls, but this sex difference reached significance only for the Mexican children in the Achievement Condition, $p < .05$. Analysis of the difference between the Unstructured and Achievement Condition revealed a sex x culture interaction: in the United States boys more than girls behaved in the Unstructured Condition as they did in the Achievement Condition, $p < .01$; in Mexico girls more than boys were high achieving in the Unstructured Condition, $p < .06$.

Table 3

Average difference in performance in the Unstructured and Achievement Condition for Boys and Girls in Mexico and the United States.

Culture	Boys	Girls
Mexico	26.5	16.7
United States	4.4	7.9

In the Unstructured Condition subjects averaged 4.0 presses more per trial in the second five than in the first five trials. This split-half difference did not reach significance. In both cultures 14 of the 16 subjects averaged more presses on the second half of the trials than on the first half. This difference did reach statistical significance, $p < .001$, Binominal test. There were no significant trial effect on performance in the Achievement Condition.

Stated Level of Aspiration. Anglo American children stated higher goals than Mexican children in both the Unstructured ($p < .01$) and Achievement ($p < .001$) Conditions.

Table 4

Average stated level of aspiration for Anglo American and Mexican children in the Unstructured and Achievement Conditions.

Culture	Unstructured	Achievement
Anglo American	30.6	50.5
Mexican	17.1	31.9

Thirteen of the 16 Anglo American children stated goals averaging over 20 presses per trial in the Unstructured Condition; only three of the 16 Mexican children did so; $p < .001$, Chi Square. Fourteen of the 16 Anglo American children stated goals averaging more than 40 presses per trial in the Achievement Condition; only five Mexican children did so; $p < .001$, Chi Square.

Both Anglo American and Mexican children stated higher goals in the Achievement than in the Unstructured Condition; $p < .001$. Every

child of both cultures, except one Anglo American boy, averaged higher stated goals in the Achievement than in the Unstructured Condition. Anglo American children stated goals in the Unstructured Condition which were 62.9% of those they stated in the Achievement Condition; Mexican children stated goals in the Unstructured Condition which were 56.3% of those they stated in the Achievement Condition. This difference was not significant.

There was a tendency for boys to state higher goals than girls in both cultures under both conditions, but this trend reached significance ($p < .05$) only for the Mexican children in the Achievement condition. Boys and girls in each culture differed in their tendency to state goals in the Unstructured Condition like those they stated in the Achievement Condition. In Mexico girls stated goals in the Unstructured Condition which averaged 69.8% of those they stated in the Achievement Condition; boys averaged 42.9% of their stated Achievement Condition goals. This difference is significant, $p < .01$. In the United States boys stated goals in the Unstructured Condition which averaged 68.3% of those they stated in the Achievement Condition; girls averaged 57.5% of their stated Achievement Condition goals. This difference is not significant.

There is a tendency for the children of both cultures to state higher goals over trials in the Unstructured Condition, but this trend did not reach significance. Thirteen of the 16 Mexican children in the Unstructured Condition stated higher goals in the second than in the first five trials. This number is significantly more than would be expected by chance; $p < .05$, Binominal test.

EXPERIMENT 5: PREFERENCE FOR EXPRESSION OF DESIRE

An alloplastic individual is set to seek ways he can adjust the world to suit his own needs; the autoplastic individual is more concerned with adjusting himself to the presses of the environment. Thus an alloplastic mode of adaption implies a greater need-orientation, a greater sensitivity and openess to one's own needs, and a greater willingness to express those needs in order to satisfy them.

To provide further test for the hypothesis that urban Anglo Americans are more alloplastic than rural Mexican subjects, a novel situation was created in which children could more or less openly express their desires. With the assumption that children of both cultures would like to have a whole bag of 100 candies, children were faced with such a bag and their willingness to ask for it was measured.

Method

Subjects. Subjects were sixteen rural Mexican and sixteen urban Anglo American children, ages 7-9 years, equally divided by sex.

Apparatus and Procedure. Children sat facing a transparent cellophane bag of 100 hard round candies which are common in rural Mexico and urban United States. The children were told,

> "Here is a bag of 100 candies. You can have as many of these candies as you like. You can have all 100 if you like, or just one, or none -- you may have whatever number you ask for. How many candies would you like?"

To probe the willingness of children to defend their desire when confronted by a questioning authority, if the child asked for the whole bag of candy, the experimenter asked, "Aren't you ashamed to

ask for so many candies? How many would you really like?" To probe the limits of the hesitancy of children not to ask for the whole bag, if the child asked for less than the whole bag, the experimenter asked, "Why didn't you ask for the whole bag? How many would you really like?"

Results

In their initial request for candy Anglo American children asked for an average of 73.3 candies; Mexican children requested an average of 19.2. This difference is statistically significant; $p < .001$, Mann-Whitney U test. Eleven of the 16 Anglo American children and only two Mexican children initially asked for the whole bag of candies. This difference is significant; $p < .01$, Chi Square. Fourteen of the 16 Anglo American children and only three Mexican children requested over ten candies. This difference is significant; $p < .001$, Chi Square.

Of those children initially requesting all the candies, ten of the 11 Anglo American and neither of the two Mexican children maintained thier request when asked if they were ashamed to ask for so many. This difference is significant; $p < .05$, Fisher Test. Almost all of the Anglo American children denied shame and defended their request by spontaneously promising either to share the sweets with family or friends or to eat only a few candies a day. The only Anglo American girl to say she was ashamed lowered her request to 44. In contrast, both of the Mexican children who initially asked for 100 candies stated they were ashamed and both lowered their request to 50 and 4.

Of those children not initially asking for the whole bag, two of the five Anglo American and only three of the 14 Mexican children increased their request to 100. Fisher test indicates this difference is not

statistically significant. There appears however to be a qualitative difference in the reactions of children in each culture to the encouragement to request more candies. The three Anglo American children who maintained their request at less than 100 showed no apparent conflict. Two indicated a fear of the dentist and the other indicated a dislike of sweets. In contrast, almost all 11 Mexican children not requesting the whole bag showed from moderate to intense conflict. Most of the Mexican children squirmed, looked away, scratched themselves, bit their nails, hesitated, or even stammered in answering.

In some of the Mexican children signs of conflict were evidenced at the time they made their initial request. For example, when first asked how many candies she would like, one Mexican girl bit her finger, started to answer, hesitated, and then looked away. She was asked three more times, with over a minute wait between questions before she answered. Finally, in a meek voice, she requested seven candies. When she was then asked why she did not ask for the whole bag, she covered her mouth with both hands and moved back in her chair. When the question was repeated, she began biting her thumb nail and after some hesitation, with a low voice and lowered eyes, she requested the whole bag.

When asked for their initial request, a number of Mexican children indicated that they preferred that the experimenter determine how many candies be given them. No Anglo American child ever expressed such a desire.

Discussion

Consistent with the alloplastic-autoplastic hypothesis, Anglo American children more than rural Mexican children request and defend requests for candies they want. Rather than freely expressing their desires, rural Mexican children express more shame and conflict. The amount of conflict expressed by the rural Mexican children indicates that their lower requests were not a function of lower desire, but rather higher anxiety about having or expressing that desire.

A number of Mexican children appeared more confortable with restructuring the situation into one in which the experimenter determined what they would receive. They thus expressed a preference for autoplastic over alloplastic adaption. In other terms, they expressed a preference for external control. This behavior suggests that preference for external control may be determined to some extent in rural Mexican children by anxiety about the propriety of their own impulses. A somewhat different interpretation is that the children are simply seeking the relationship to their environment to which they have been acustomed.

Asking for only a little may not be reduced to a simple avoidance of asking for more. Asking for only a little is a positive value which is modeled and reinforced in the Mexican culture. Shortly after this experiment was conducted, in June, 1969, the children of San Vincente put on a school play as part of the fiesta celebrating the end of the school year. The play was chosen by the students, from one of their readers (Berdiales, 1959). The play, titled Margot,

is from a composition by Juan de Dios Peza. In the play four children have all passed to the next grade and three of the children ask their father for many presents. Then comes Margarita's turn, and she says "Yo papa, lo que tu quieras..." ("for me, what you want to give'). He persists in asking her what she would like and she says "Y si estas Pobre, Lo que dejen, lo que sobre; eso me llevo yo!" (And if you are poor, what is left by other, what is left over; that's what I'll take!). The father is then moved to great emotion:

> Pobrecita! Pobrecita! Se siempre asi Margarita; bondadosa, resignada; ninguna ambicion alientes: acepta pobres presentes, pero, nunca pidas nada!
>
> (P. 99)

> Poor little one! Poor little one! Always be that way Margarita; good, resigned, with no ambition: accept poor presents, but never ask for anything.

In an informal unstructured discussion after the play some of the children of San Vincente who had seen the play told this investigator that Margarita was a model daughter.

EXPERIMENT 6: PREFERENCE FOR RISK TAKING

In their review of risk taking, Kogan and Wallach (1967, p. 173) state that "Since it may be possible to devise culture-fair decision-making procedures of a non-verbal performance sort, comparative studies of individuals from different cultural settings may prove feasible." The equal expected outcome risk taking situation provides such a non-verbal performance task which is particularly likely to reflect personality variables. In the equal expected outcome situation preference for high or low risk and preference for various betting strategies are probably not a function of rationality, intelligence, or familiarity with betting in general because no betting strategy is superior.

There are a number of reasons to expect that alloplastic adaptation should be associated with preference for higher risk in an equal expected outcome betting situation. First, an alloplastic orientation is associated with a willingness to try for more from the environment. And the way to try for the most possible in an equal expected outcome betting situation is to place low probability, high payoff bets. Second, an alloplastic orientation is associated with trusting oneself, deciding on the basis of one's internal sense of what is needed, felt, or experienced, and so is likely to be associated with a belief that one can best choose for oneself. And in an equal expected outcome risk situation in which the lowest risk bet covers all the alternatives, a belief in one's ability to choose correctly is likely to be expressed by some risk taking; lack of such trust in oneself is likely to be expressed by preference for the no risk alternative. Third,

an alloplastic orientation is associated with an active and manipulative orientation toward the environment rather than a passive acceptance of whatever the environment provides. Preference for activity might manifest itself as choosing some number to bet on in contrast to choosing the no risk alternative. Further, there may be more than a verbal association between activity and risk. Finally, an alloplastic orientation is associated with an analytic as opposed to global cognitive style. An alloplastic mode is associated with separating figure from ground, imposing structure on ambiguous stimuli. The entire betting field may be seen as the ground from which the alloplastic individual might separate his choice, the figure. In contrast, the autoplastic individual may not separate figure and ground and may prefer to cover the entire betting field.

On theoretical grounds there is at least one reason to believe that alloplastic individuals might more often prefer the no risk alternative. If preference for control in an alloplastic individual manifests itself in a desire for certainty as opposed to a desire for making the world give him what he wants, then he might more often choose the no risk alternative.

Although the theoretical reasons as a whole definitely give reason to expect alloplastic individuals to prefer risk, the empirical data is mixed. The relationship between locus of control and risk is not defined. Liverant & Scodel (1960) found externally controlled subjects select more high risk bets in contrast to internals who preferred intermediate and low risk bets. In contrast, Strickland, Lewicki, and Katz (1966) present evidence that in a chance situation internals prefer greater risk than externals.

Class and cultural findings also present a mixed picture with regard to the alloplastic-autoplastic hypothesis. Lefcourt (1965) found black prisoners preferred lower risk bets than white prisoners. But apparently no generalization about class differences are warrented because college students take lower risks than National Guard or Air Force men (Mosteller & Nogee, 1951; Scodel, Ratoosh, and Minas, 1959). These studies indirectly provide more evidence for the indeterminancy of the relationship between risk and external control, for black prisoners are more externally controlled than white prisoners, but prefer lower risk; in contrast, service men are more externally controlled than the college students, but prefer higher risk.

There is a large body of research on the relationship of risk taking and need for achievement (Atkinson, 1958; Atkinson & Feather, 1966; Atkinson, 1964), most of which is not relevant to risk taking in chance situations. McClelland (1961) claims that those high in need for achievement should not like pure chance situations and hence should prefer low risks. Some findings have supported McClelland's claim that high need achievers prefer conservative betting (Littig, 1963; Raynor & Smith, 1966). Other findings have indicated that high need achievers prefer middle risks, even in chance situations (Atkinson, Bastian, Earl, & Litwin, 1960; Myer, Walker, & Litwin, 1961). In either case, the hypothesis that an alloplastic adaption mode should be associated with high risk taking is counterindicated by the achievement literature.

Baron (1968) has found high authoritarianism relates to conservative risk taking. Authoritarian subjects, among other things, like and obey authority (Adarno, et. al., 1950). As noted, obedience to authority is associated with an autoplastic adaption mode, so there is

some support for the hypothesis that autoplastic individuals should prefer low risks.

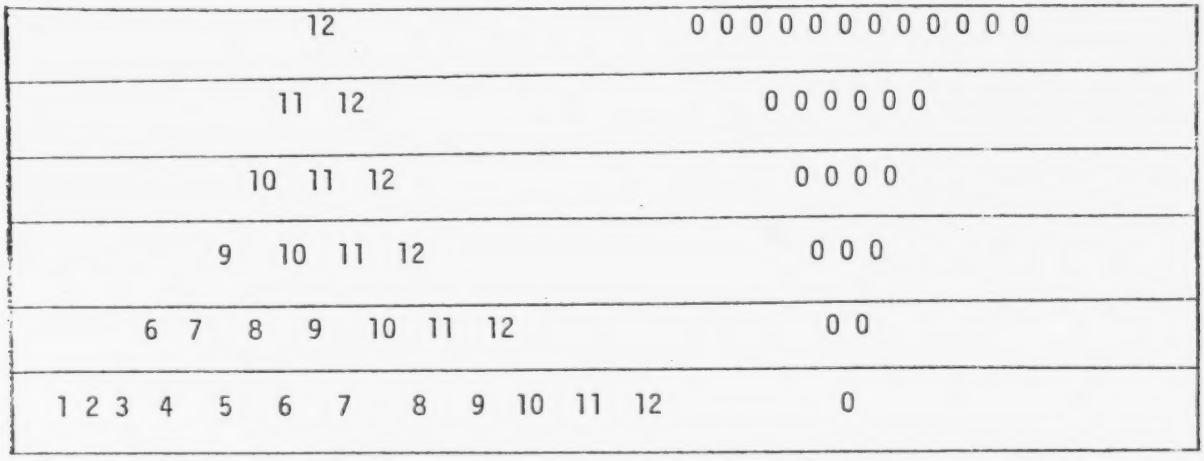
Testing the hypothesis that urban Anglo American children are more alloplastic in contrast to more autoplastic urban Mexican children takes yet another form in the present experiment. The field independence, conformity, preference for control, and preference for aspiration and achievement variables are each empirically related to a general preference for alloplastic or autoplastic adaption. The expression of desire variable is not empirically related to either mode of adaption, but is in itself an alloplastic act (trying to adjust the environment to ones desires). Preference for risk taking, in contrast, is neither empirically related to the alloplastic or autoplastic modes nor in itself necessarily an alloplastic act. Nevertheless, as noted, there are theoretical reasons for believing that an alloplastic mode of adaption is related to preference for risk. On this basis it was predicted that urban Anglo American would more often and to a greater extent prefer risk.

Method

Subjects. Sixteen rural Mexican Children from San Vicente and sixteen urban Anglo American children from Los Angeles, ages 7-9, equally divided by sex, participated.

Apparatus. The experimental equipment consisted of a wheel of chance and a betting field. The wheel of chance had twelve equally probable outcomes numbered one through twelve. The betting field consisted of six rectangular boxes each containing from one to twelve numbers representing wheel of chance outcomes. See Figure 1.

Figure 1.



Equal Expected Outcome Betting Field. Each betting alternative is represented by one box. Numbers in the box represent wheel of chance outcomes; circles in the same box represent payoffs.

All betting alternatives had equal expected values. From low to high risk, the alternatives paid: one chip for any outcome; two chips for half the outcomes; three chips for one third the outcomes; four chips for one fourth the outcomes; six chips for one sixth the outcomes; and twelve chips for one twelvth the outcomes.

Procedure. Subjects were seated facing the betting field in view of the wheel of chance. After subjects were shown how the wheel could be spun and how it indicated the various numbers, they were given 24 white chips and were instructed as follows about betting,

> "There are twelve numbers on the wheel. Each time the wheel is spun, any number can come up--each number comes up about as often as the others. You can bet on which ever numbers you wish. You bet by placing one of your white chips in one of these six boxes. Then the wheel is spun. If the wheel falls on a number in the box you bet on, you win one black chip for every circle to the right of the box. For example, if you bet on this box (number 1-12), you can win a chip every time, because all the numbers are in this box. If you bet on this box (number 12), you can win twelve chips, but only if number 12 comes up. If the wheel falls on a number which is not in the box you bet on, you will not win any ships that spin. You will have a chance to bet each of your white chips, one at a time. After you bet all your white chips you can trade the black chips you win for toys. The more black chips you win, the more toys you will receive from this box (toys indicated)."

After the procedure was explained and after the children demonstrated they understood how many chips they could receive by winning and losing at each alternative, they were allowed to bet one chip a trial for 24 trials.

Proposed Analysis:

The effect of culture, sex, and trials on frequency of betting on the no risk, highest risk, and middle risk alternatives will be analyzed by a Mann-Whitney U test. Betting strategies will be analyzed in terms of what children do following wins and following losses. Following either wins or losses children could stay, change to a higher risk, or change to a lower risk.

EXPERIMENT 7: ALLOPLASTIC BEHAVIOR AND ADAPTIVITY

> "There is a story told in Mexico of a community development worker who finds a peasant resting by a lake. The community development worker, the representative of modern industrial society, is shocked by such unprofitable inactivity and asks the man why he does not at least tie a string to his big toe with a hook on the end and drop it in the lake. "Why?" asks the peasant. "Well, you can catch a fish and have something to eat." "I have enough to eat now," says the peasant, "Well then," says the modern man, "put strings and hooks on all your toes. Then you can catch enough fish to buy a boat. Then you can really go into business and perhaps catch enough to start a canning factory. Then you can become rich." "And what then?" asks the peasant. "Why, what then? Then, you can just relax, do nothing." "What do you think I am doing now?" answers the peasant (Fromm and Maccoby, 1970, p. 133)."

The value of active striving is so basic to urban industrialized societies that periodically they must be reminded that there is an alternative. Psychologists and psychoanalysts since World War II have assumed the function of reminding western civilization that there is another way. Karen Horney (1937) speaks of the Apollonian and Dionysian tendencies. Dionysian tendencies are autoplastic; they express the values of surrender and drift. Apollonian tendencies are alloplastic; they express the values of mastery and molding of life. She reminds her readers that both attitudes are natural and that surrender or nonstriving is a deep-rooted human attitude which is pregnant with potential satisfaction. James Bugenthal (1965) states that nonstriving or "Letting Be" ("willing assent to the is-ness of awareness without striving and without effortful concentration and decision making") is a necessary element of the actualizing life. Alan Watts (1949, p.9) focuses on the

self defeating nature of certain kinds of striving: insecurity is the result of attempts to be secure, certain kinds of wisdom elude only those who strive for it; only a proud man would attempt to obtain the grace of humility.

Diaz-Guerrero (1965, p. 10) suggests that both active and passive cultures would benefit if they could adopt some of the ways of their counterparts. "Active cultures would gain a great deal if they were able to accept as valid and good, in certain problems, the ways of passive copers. Contrarywise, passive cultures, would increase their ability to deal with stress and therefore their mental health by accepting the ways of dealing with stress actively." Interestingly, Guerrero, coming from what he calls a passive culture, speaks of "accepting" rather than "adopting" active coping.

Neither an alloplastic nor autoplastic orientation is necessarily adaptive. The adaptiveness of either orientation is situation dependent. Kagan & Madsen (1970, 1971, 1972 in press) have demonstrated that both alloplastic and autoplastic modes are non-adaptive in certain situations. Rural Mexican children persist in avoiding conflict when to do so results in their losing the toys they want. Urban Anglo American children persist in competition when only a cooperative mode would allow them to obtain the toys for which they are striving.

It would be possible to devise achievement, conformity, or preference for control situations in which either an alloplastic or autoplastic mode was adaptive or non-adaptive. For example, although internal locus of control is usually associated with better performance, externality is

more adaptive in a situation in which the rewards are in fact externally controlled (Julian & Katz, 1968). Internality is associated with a better self-image, but externality is associated with better memory and less repression of undesired environmental stimuli. In situations in which one's senses are unreliable (instrument flying), failure to rely on external authority means death. Although field independence leads to a truer sense of the upright, field dependence leads to better incidental learning (Witkin, et al., 1962). Maccoby and Modiano (1966, 1969) note that the cognitive styles of both rural Mexicans and urban Anglo Americans, at least in the extreme form, are nonadaptive: Mexican children fail to see important relations; Anglo American children lose contact with important perceptual qualities. Swartz (1967) notes that urban Anglo Americans produce more in the Holtzman Inkblots Test, but they are more often anxious and more often show poorer form appropriateness. McClelland (1953) notes that high achievers sometimes make more errors in their haste to produce. Henry (1963) makes the case that the achievement motive is a classical compulsion which is motivated by a fear of failure.

It appears that both the urban Anglo American and rural Mexican cultures impose on their children a preferred mode of adaption, but that neither mode is particularly more rational. One approach to testing the strength of these cultural modes is to test the variety of situations in which they prevail. Experiments one through six have been based partially on that approach. A second approach is to determine the extent to which children will persist in their preferred cultural mode when to

do so is non-adaptive. Kagan & Madsen (1970, 1971, 1972 in press) have shown that cultural mode overshadows adaptivity for both cultures in cooperation-competition situations. The present experiment is designed to further test the hypothesis that both cultures will persist in their preferred cultural mode to a non-adaptive extent. The present experiment makes use of a novel experimental task which measures the extent to which children act or fail to act on their environment in an alloplastic manner when to do so is irrational.

As a yet further test of the alloplastic-autoplastic hypothesis, the present experiment includes several semi-unobtrusive measures of behavior along the alloplastic-autoplastic dimension: the amount of spontaneous manipulation of the experimental apparatus before the experimental instructions are given, the number of questions and comments made by subjects, and the number of subjects who, while selecting their toys after the experiment, open a closed paper bag containing toys.

Method.

Subjects. Thirty two rural Mexican children from San Vincente, Baja California and thirty two urban Anglo American children from Cucomonga, California will participate. Children of each cultural group will be equally divided by sex and age (7-9 and 10-12 years).

Apparatus. Children will be seated before an apparatus which consists of a fifty pound spring scale, a pull-indicator which indicates the heaviest pull to which the scale has been subjected, and a handle which is connected to the scale by a string, which breaks at six pounds of pull.

Procedure. Children will be measured individually. After each child is seated, for one minute the experimenter will occupy himself with numbering his score sheet, while unobtrusively counting the number of times children touch the apparatus and pick up the handle. If children pull the handle, the number of pounds of pull will be noted. Any questions or comments will also be noted. After one minute, the experimenter will finish his numbering and will explain how the handle is connected to the scale and how the pull indicator indicates the amount of pull exerted.

The experimenter will then instruct the children as follows:

> "You may pull the handle ten times. After each pull you will receive a marble for each number indicated here (pull indicator indicated). The harder you pull the more marbles you will receive, but if any time you pull so hard as to break this string, that time you won't receive any marbles. The marbles you receive will be placed in this glass for you. After your ten pulls, you may trade the marbles you earn for toys from this box (a large variety of desired toys will be displayed).

Among the toys, which are in paper boxes and cellophane bags in a large cardboard carton, will be one paper bag of toys with the top of the paper bag closed. After the experiment, while the children are trading their marbles for toys, the experimenter will note unobtrusively whether or not children ask about the contents of the paper bag, and whether or not they spontaneously open the bag.

Proposed Analysis:

The effects of culture, age, and sex will be analyzed in terms of average strength of pulls, average number of pulls per child less than five pounds, and average number of times children break the string. The significance of number of children of each group breaking the string more than once will be tested by Chi Square. Chi Square will also be used to test the significance of the unobstrusive measures of assertiveness.

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